

WHAT IS CLAIMED IS:

1. A method for provisioning non-preemptible unprotected traffic (NUT) in a bi-directional ring, the ring comprising a plurality of nodes, each node comprising  
5 a local NUT table operable to store NUT provisioning data for the node, comprising:

distributing a master NUT table to each of the nodes, the master NUT table comprising NUT provisioning data for the ring;

10 verifying the master NUT table at each of the nodes; and

storing in the local NUT table at each of the nodes the NUT provisioning data in the master NUT table when the master NUT table is verified by every node.

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2. The method of Claim 1, each node further comprising a cross-connect table operable to store cross-connect provisioning data for the node, verifying the master NUT table at each of the nodes comprising:

20 comparing the NUT provisioning data in the master NUT table to the cross-connect provisioning data in the cross-connect table; and

rejecting the master NUT table as unverified when the NUT provisioning data conflicts with the cross-connect  
25 provisioning data.

3. The method of Claim 1, further comprising:  
receiving the master NUT table at each node from  
a first direction and from a second direction; and  
verifying the master NUT table at each of the  
5 nodes comprising comparing the NUT provisioning data in the  
master NUT table received in the first direction to the NUT  
provisioning data in the master NUT table received in the  
second direction and rejecting the master NUT table as  
unverified when the NUT provisioning data received in the  
10 first direction conflicts with the NUT provisioning data  
received in the second direction.

4. The method of Claim 1, further comprising:  
receiving the master NUT table at each node from  
15 a first direction and from a second direction; and  
verifying the master NUT table at each of the  
nodes comprising comparing parity data for the NUT  
provisioning data in the master NUT table received in the  
first direction to parity data for the NUT provisioning  
20 data in the master NUT table received in the second  
direction and rejecting the master NUT table as unverified  
when the parity data for the NUT provisioning data received  
in the first direction conflicts with the parity data for  
the NUT provisioning data received in the second direction.

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5. The method of Claim 1, each node further comprising a cross-connect table operable to store cross-connect provisioning data for the node, the method further comprising receiving the master NUT table at each node from  
5 a first direction and from a second direction, and verifying the master NUT table at each of the nodes comprising:

comparing the NUT provisioning data in the master NUT table to the cross-connect provisioning data in the  
10 cross-connect table;

comparing the NUT provisioning data in the master NUT table received in the first direction to the NUT provisioning data in the master NUT table received in the second direction;

15 comparing parity data for the NUT provisioning data in the master NUT table received in the first direction to parity data for the NUT provisioning data in the master NUT table received in the second direction;  
and

20 rejecting the master NUT table as unverified when the NUT provisioning data conflicts with the cross-connect provisioning data, when the NUT provisioning data received in the first direction conflicts with the NUT provisioning data received in the second direction, or when the parity  
25 data for the NUT provisioning data received in the first direction conflicts with the parity data for the NUT provisioning data received in the second direction.

6. The method of Claim 5, verifying the master NUT table at each of the nodes further comprising accepting the master NUT table as verified when the NUT provisioning data matches the cross-connect provisioning data, the NUT provisioning data received in the first direction matches the NUT provisioning data received in the second direction, and the parity data for the NUT provisioning data received in the first direction matches the parity data for the NUT provisioning data received in the second direction.

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7. The method of Claim 1, further comprising:  
sending a start request to a provisioning node;

and

15 distributing a master NUT table to each of the nodes comprising distributing the master NUT table from the provisioning node to each of the nodes when the start request is received by the provisioning node.

20 8. The method of Claim 1, the ring comprising a 2-fiber bi-directional line-switched ring, distributing a master NUT table to each of the nodes comprising distributing the master NUT table through header bytes.

9. A node for a bi-directional ring comprising a plurality of nodes, comprising:

a local non-preemptible unprotected traffic (NUT) table operable to store NUT provisioning data for the node;  
5 and

a node manager operable to receive a master NUT table, the master NUT table comprising NUT provisioning data for the ring, to verify the master NUT table, to communicate with other nodes in the ring to determine  
10 verification of the master NUT table by the other nodes, and to store in the local NUT table the NUT provisioning data in the master NUT table when the master NUT table is verified by the node and when verification by the other nodes is determined.

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10. The node of Claim 9, the node manager comprising a cross-connect table operable to store cross-connect provisioning data for the node and further operable to verify the master NUT table by comparing the NUT  
20 provisioning data in the master NUT table to the cross-connect provisioning data in the cross-connect table and rejecting the master NUT table as unverified when the NUT provisioning data conflicts with the cross-connect provisioning data.

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11. The node of Claim 9, the node manager further operable to receive the master NUT table from a first direction and from a second direction and to verify the master NUT table by comparing the NUT provisioning data in  
5 the master NUT table received in the first direction to the NUT provisioning data in the master NUT table received in the second direction and rejecting the master NUT table as unverified when the NUT provisioning data received in the first direction conflicts with the NUT provisioning data  
10 received in the second direction.

12. The node of Claim 9, the node manager further operable to receive the master NUT table from a first direction and from a second direction and to verify the  
15 master NUT table by comparing parity data for the NUT provisioning data in the master NUT table received in the first direction to parity data for the NUT provisioning data in the master NUT table received in the second direction and rejecting the master NUT table as unverified  
20 when the parity data for the NUT provisioning data received in the first direction conflicts with the parity data for the NUT provisioning data received in the second direction.

13. The node of Claim 9, the node manager comprising a cross-connect table operable to store cross-connect provisioning data for the node and further operable to receive the master NUT table from a first direction and  
5 from a second direction and to verify the master NUT table by comparing the NUT provisioning data in the master NUT table to the cross-connect provisioning data in the cross-connect table, comparing the NUT provisioning data in the master NUT table received in the first direction to the NUT  
10 provisioning data in the master NUT table received in the second direction, comparing parity data for the NUT provisioning data in the master NUT table received in the first direction to parity data for the NUT provisioning data in the master NUT table received in the second  
15 direction, and rejecting the master NUT table as unverified when the NUT provisioning data conflicts with the cross-connect provisioning data, when the NUT provisioning data received in the first direction conflicts with the NUT provisioning data received in the second direction, or when  
20 the parity data for the NUT provisioning data received in the first direction conflicts with the parity data for the NUT provisioning data received in the second direction.

14. The node of Claim 13, the node manager further operable to verify the master NUT table by accepting the master NUT table as verified when the NUT provisioning data matches the cross-connect provisioning data, the NUT provisioning data received in the first direction matches the NUT provisioning data received in the second direction, and the parity data for the NUT provisioning data received in the first direction matches the parity data for the NUT provisioning data received in the second direction.

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15. The node of Claim 9, the node manager further operable to send a start request to a provisioning node in the ring, the start request comprising a request for the provisioning node to distribute a master NUT table to each of the nodes in the ring.

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16. The node of Claim 9, the ring comprising a 2-fiber bi-directional line-switched ring, the node manager further operable to receive the master NUT table through header bytes.

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17. A system for provisioning non-preemptible unprotected traffic (NUT) in a node of a bi-directional ring, comprising:

- 5 a computer-processable medium; and  
logic stored on the computer-processable medium,  
the logic operable to store NUT provisioning data for the  
node in a local NUT table, to receive a master NUT table,  
the master NUT table comprising NUT provisioning data for  
the ring, to verify the master NUT table, to communicate  
10 with other nodes in the ring to determine verification of  
the master NUT table by the other nodes, and to store in  
the local NUT table the NUT provisioning data in the master  
NUT table when the master NUT table is verified by the node  
and when verification by the other nodes is determined.

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18. The system of Claim 17, the logic further  
operable to store cross-connect provisioning data for the  
node in a cross-connect table and to verify the master NUT  
table by comparing the NUT provisioning data in the master  
20 NUT table to the cross-connect provisioning data in the  
cross-connect table and rejecting the master NUT table as  
unverified when the NUT provisioning data conflicts with  
the cross-connect provisioning data.

19. The system of Claim 17, the logic further operable to receive the master NUT table from a first direction and from a second direction and to verify the master NUT table by comparing the NUT provisioning data in  
5 the master NUT table received in the first direction to the NUT provisioning data in the master NUT table received in the second direction and rejecting the master NUT table as unverified when the NUT provisioning data received in the first direction conflicts with the NUT provisioning data  
10 received in the second direction.

20. The system of Claim 17, the logic further operable to receive the master NUT table from a first direction and from a second direction and to verify the  
15 master NUT table by comparing parity data for the NUT provisioning data in the master NUT table received in the first direction to parity data for the NUT provisioning data in the master NUT table received in the second direction and rejecting the master NUT table as unverified  
20 when the parity data for the NUT provisioning data received in the first direction conflicts with the parity data for the NUT provisioning data received in the second direction.

21. The system of Claim 17, the logic further operable to store cross-connect provisioning data for the node in a cross-connect table, to receive the master NUT table from a first direction and from a second direction, and to verify the master NUT table by comparing the NUT provisioning data in the master NUT table to the cross-connect provisioning data in the cross-connect table, comparing the NUT provisioning data in the master NUT table received in the first direction to the NUT provisioning data in the master NUT table received in the second direction, comparing parity data for the NUT provisioning data in the master NUT table received in the first direction to parity data for the NUT provisioning data in the master NUT table received in the second direction, and rejecting the master NUT table as unverified when the NUT provisioning data conflicts with the cross-connect provisioning data, when the NUT provisioning data received in the first direction conflicts with the NUT provisioning data received in the second direction, or when the parity data for the NUT provisioning data received in the first direction conflicts with the parity data for the NUT provisioning data received in the second direction.

22. The system of Claim 21, the logic further operable to verify the master NUT table by accepting the master NUT table as verified when the NUT provisioning data matches the cross-connect provisioning data, the NUT provisioning data received in the first direction matches the NUT provisioning data received in the second direction, and the parity data for the NUT provisioning data received in the first direction matches the parity data for the NUT provisioning data received in the second direction.

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23. The system of Claim 17, the logic further operable to send a start request to a provisioning node, the start request comprising a request for the provisioning node to distribute a master NUT table to each of the nodes in the ring.

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24. The system of Claim 17, the ring comprising a 2-fiber bi-directional line-switched ring, the logic further operable to receive the master NUT table through header bytes.

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25. A bi-directional ring operable to provision non-preemptible unprotected traffic (NUT) and comprising a plurality of nodes, the ring comprising:

5 a provisioning node operable to distribute a master NUT table to each of the nodes and to receive an acknowledgement of the master NUT table, the master NUT table comprising NUT provisioning data for the ring;

10 at least one intermediate node operable to receive the master NUT table and the acknowledgement and to pass the master NUT table and the acknowledgement around the ring; and

a destination node operable to receive the master NUT table and to send the acknowledgement around the ring.

15 26. The ring of Claim 25, each node comprising a local NUT table operable to store NUT provisioning data for the node, and wherein:

20 the provisioning node is operable to verify the master NUT table based on the distributed master NUT table and the received acknowledgment;

the intermediate node is operable to verify the master NUT table based on the received master NUT table and the received acknowledgment;

25 the destination node is operable to receive the master NUT table from a first direction and from a second direction and to verify the master NUT table based on the master NUT table received in the first direction and the master NUT table received in the second direction; and

30 each node is operable to store in the local NUT table for the node the NUT provisioning data in the master NUT table when the master NUT table is verified by every node.

27. The ring of Claim 25, further comprising an initiating node, the initiating node operable to send a start request to the provisioning node, the provisioning  
5 node further operable to distribute the master NUT table to each of the nodes in the ring when the start request is received.

28. The ring of Claim 25, the provisioning node  
10 further operable to distribute the master NUT table to each of the nodes through header bytes.

29. The ring of Claim 25, each node comprising a local NUT table operable to store NUT provisioning data for the node and a cross-connect table operable to store cross-connect provisioning data for the node, each node operable  
5 to receive the master NUT table from a first direction and from a second direction and to verify the master NUT table by comparing the NUT provisioning data in the master NUT table to the cross-connect provisioning data in the cross-connect table, comparing the NUT provisioning data in the  
10 master NUT table received in the first direction to the NUT provisioning data in the master NUT table received in the second direction, comparing parity data for the NUT provisioning data in the master NUT table received in the first direction to parity data for the NUT provisioning  
15 data in the master NUT table received in the second direction, and rejecting the master NUT table as unverified when the NUT provisioning data conflicts with the cross-connect provisioning data, when the NUT provisioning data received in the first direction conflicts with the NUT provisioning data received in the second direction, or when the parity data for the NUT provisioning data received in the first direction conflicts with the parity data for the NUT provisioning data received in the second direction.

30. The ring of Claim 29, each node further operable to verify the master NUT table by accepting the master NUT table as verified when the NUT provisioning data matches the cross-connect provisioning data, the NUT provisioning
- 5 data received in the first direction matches the NUT provisioning data received in the second direction, and the parity data for the NUT provisioning data received in the first direction matches the parity data for the NUT provisioning data received in the second direction.
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